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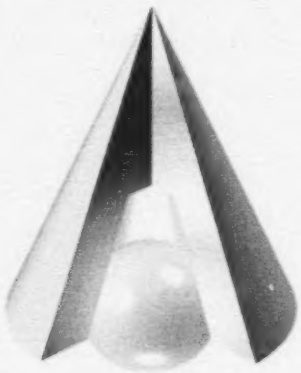
Which Families Invest in Registered Education Savings Plans and Does It Matter for Postsecondary Enrolment?



by Marc Frenette

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.. not available for a specific reference period
... not applicable
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0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
^{p} preliminary
^{r} revised
x suppressed to meet the confidentiality requirements of the *Statistics Act*
^{E} use with caution
F too unreliable to be published
* significantly different from reference category ($p < 0.05$)

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Abstract

The registered education savings plan (RESP) investment vehicle is designed to encourage parents of school-age children to save early for their children's education. This study investigates RESP investments in families, by family income, and subsequent postsecondary enrolment among children in these families. The study finds that among families with children under the age of 18, RESP holding rates and average dollar amounts were higher for those in higher income quintiles. This pattern held for both years examined—1999 and 2012. While average RESP dollar holdings increased for families in all income quintiles throughout the period, they grew fastest among families in the top income quintile in both absolute terms and relative terms. The gap in RESP holdings between families at the top and bottom of the income distribution was largely attributable to higher wealth and (to a lesser extent) higher levels of parental education among families at the top of the distribution. A lower level of awareness of RESPs among families in the bottom income quintile may have also been a factor. In addition, the study finds that having access to an RESP account at age 15 was associated with higher postsecondary enrolment rates by age 19, independent of family income. The gap in postsecondary enrolment rates between RESP holders and non-holders declined over time in all income quintiles. By age 27, the association between RESPs and enrolment was still positive across the income distribution, but it was statistically significant only for youth in the second, third and fourth income quintiles. A positive association between RESP use and postsecondary enrolment was also found among boys and girls, both in the short term and in the long term; however, the association was about twice as strong among boys.

Executive summary

The registered education savings plan (RESP) savings vehicle is designed to encourage parents of school-age children to save for their children's postsecondary education through tax-sheltered earnings on contributions, as well as through additional contributions from the federal government. No recent evidence exists on the characteristics of RESP holders, and little exists on the association between having an RESP and enrolling in postsecondary education.

This study makes three contributions to the literature. First, it documents differences in RESP holdings by family income and how these have evolved over time. Second, it decomposes these differences (particularly between the top and bottom quintiles of family income) into portions that are related to differences in key determinants of RESP participation (e.g., family wealth and parental education). And, third, it examines the relationship between having an RESP account and attending a postsecondary institution.

The study uses the 1999 and 2012 versions of the Survey of Financial Security (SFS) to examine differences in RESP holdings across the income distribution. A key feature of the SFS data is the inclusion of specific components of family wealth, including RESPs. The SFS data also contain detailed family background information.

The analysis focuses on all economic families with at least one child under 18 years of age. The families are classified by quintile of equivalent after-tax economic family income. The quintile thresholds are based on fixed income thresholds (from the 2012 SFS data) for families in both surveys to allow comparisons over time.

Two potential key determinants of family RESP holdings are net worth (wealth, or assets less debts) and parental education, both of which are available in the SFS. Families with less wealth may be less able to afford investing in their children's education, including through the RESP vehicle. Since it is possible that total wealth may be determined in part by RESP holdings, the primary measure of wealth used in this study excludes RESPs. However, it is also possible that RESP contributions do not affect total wealth in the family (i.e., the family may simply move assets to invest in RESPs). To allow for this possibility, supplementary estimates are also produced from a wealth measure that includes RESP holdings. Parental education may also influence a family's decision to invest in RESPs, particularly if parents expect their children to follow the same educational pathway they did.

The SFS data include a host of other potential determinants of RESP holdings that are used in this study, including the age and marital status of the parent or parents, the number of children and the age of these children, and geographic information (region, and urban or rural status). Supplementary results also incorporate a measure of parental immigrant status.

Two outcomes are examined: the probability of holding an RESP and the average (mean) dollar value of RESP holdings among all families in the sample (including those with no RESP). The Blinder–Oaxaca decomposition approach is used to examine differences in the probability of RESP participation between families in the top and bottom income quintiles. For the dollar value of RESP holdings, a tobit model is used, given that the data have many zero values. In this tobit model, variables are introduced incrementally to assess their marginal contribution to explaining the difference in the outcome variable across income quintiles.

To examine the relationship between access to an RESP and postsecondary enrolment, the study turns to the Youth in Transition Survey, Cohort A (YITS-A), and the Programme for International Student Assessment (PISA). YITS-A and PISA data have been used extensively to study the factors underlying postsecondary enrolment (e.g., Finnie et al. 2008, 2010). In addition, the data are linked to the T1 Family File (T1FF), which contains identifiers for postsecondary enrolment.

Importantly, the match rate is almost 96%, which helps address the attrition issues in the original survey panel.

The approach used in this portion of the study is to estimate linear probability models of postsecondary enrolment by specific age (ranging from 19 to 27) as a function of having an RESP account at age 15. The models include several important covariates measured at age 15, including student background characteristics, academic performance in high school and the propensity of the high school to produce students who pursue further education.

The study finds that among families with children under the age of 18, RESP holding rates and average dollar amounts were higher for those in higher income quintiles. This pattern held for both years examined—1999 and 2012. While average RESP dollar holdings increased for families in all income quintiles throughout the period, they grew fastest among families in the top income quintile in both absolute terms and relative terms. The gap in RESP holdings between families at the top and bottom of the income distribution was largely attributable to higher wealth and (to a lesser extent) higher levels of parental education among families at the top of the distribution. A lower level of awareness of RESPs among families in the bottom income quintile may have also been a factor. In addition, the study finds that having access to an RESP account at age 15 was associated with higher postsecondary enrolment rates by age 19, independent of family income. The gap in postsecondary enrolment rates between RESP holders and non-holders declined over time in all income quintiles. By age 27, the association between RESPs and enrolment was still positive across the income distribution, but it was statistically significant only for youth in the second, third and fourth income quintiles. A positive association between RESP use and postsecondary enrolment was also found among boys and girls, both in the short term and in the long term; however, the association was about twice as strong among boys.

1 Introduction

There is a well-established literature devoted to estimating the returns on education in terms of annual earnings. Studies in this literature have consistently estimated positive returns on schooling in terms of annual earnings, usually amounting to 10% or more per additional year of instruction (see Card [1999] for a survey of the mostly American literature and Lemieux and Card [2001] for Canadian evidence).

Over time, the earnings premiums for workers with higher levels of education may add up. Indeed, Frenette (2014) used 1991 Census data linked to tax data from 1991 to 2010 to estimate the earnings premium associated with obtaining a bachelor's degree or a college certificate (compared with obtaining a high school diploma) over a 20-year period for people aged 35 to 54. For men, the study found that, on average, obtaining a bachelor's degree was associated with an additional $728,000 in cumulative earnings over the 20 years, while obtaining a college certificate was associated with an additional $280,000. For women, the estimated premiums were smaller, but the pattern was similar: $442,000 for obtaining a bachelor's degree and $180,000 for obtaining a college certificate.

A related literature has explored the underlying reasons behind lower postsecondary enrolment among certain groups. Using Canadian data, Frenette (2007) found that the main reasons why students from lower-income families were less likely to attend university than other students were poorer academic performance and having parents who were less educated. These reasons accounted for 34% and 30%, respectively, of the gap in university enrolment rates between youth from families at the top and bottom of the income distribution. Lower parental aspirations and a higher incidence of self-reported financial constraints played smaller but important roles, each accounting for 12% of the gap in university enrolment rates.

In Canada students interested in pursuing a postsecondary education may seek financial assistance from the federal or provincial governments through grants and loans. The federal government also offers an incentive to encourage parents of school-age children to save early for their children's education by opening and contributing to a registered education savings plan (RESP), which allows for tax-sheltered earnings on contributions and includes additional government contributions.

Very little evidence exists on RESP participation. The most comprehensive Canadian study in this area is by Milligan (2004), who used the 1999 Survey of Financial Security (SFS) to demonstrate that RESP use was concentrated in high-income, high-wealth and high-education families. More recently, Duhaime-Ross (2015*a*) used the Canada Education Savings Program administrative database to estimate the relationship between government education savings incentives and RESP contributions. One limitation of these data is that they cover only individuals who have an RESP account. The study found that government initiatives designed to encourage RESP savings (e.g., offering a grant upon opening an account and matching contributions on a proportional basis) were indeed positively associated with RESP savings. Using survey data, Duhaime-Ross (2015*b*) found that increased RESP contributions (attributable to increased incentives) were positively associated with total education savings, although some crowding out of non-RESP savings was also found for low- and high-income families. In the United States the federal Coverdell Education Savings Account and the state-level 529 savings plans are tax incentives designed to encourage savings to help offset the cost of college and university. Dynarski (2004) and Dynarski and Scott-Clayton (2006) found that these plans almost exclusively benefited higher-income families.

To date, no empirical investigation has been actively pursued into the potential relationship between tax-preferred education savings accounts (such as RESPs) and postsecondary enrolment by family income. There are at least two mechanisms through which RESPs may encourage increased postsecondary enrolment. The first is by motivating potential beneficiaries

to perform better in school since postsecondary education may seem more attainable. Duhaime-Ross (2015*b*) looked into this issue and found no association between RESP use and elementary and secondary school grades. The second mechanism concerns the affordability of postsecondary education and is thus perhaps more directly tied to the design of RESPs. Studies by Finnie and Wismer (2012) and Gray and McDonald (2012) found that students with RESPs were less likely to have student loans; this may indicate that postsecondary education was more affordable for them as a result of having had access to an RESP account.

The only known study that examines the relationship between RESPs and access to postsecondary education is by Finnie and Wismer (2012), who used the Youth in Transition Survey (YITS) (Statistics Canada n.d.*c*) data. They found that RESP use and access to postsecondary education were positively correlated, but results were not disaggregated by family income. The study is also based on survey data, which comes with non-negligible attrition. Indeed, roughly two-thirds of the original sample respondents did not respond to the cycle 6 survey. This limits how long students may be followed with these data. As will be shown in the results section, the relationship between RESPs and postsecondary attendance narrows considerably as youth age.

This study makes three contributions to the literature. The first is to document differences in RESP holdings by family income and how these have evolved over time. In essence, this updates the work of Milligan (2004). The second is to decompose these differences (particularly between the top and bottom quintiles of family income) into portions that are related to differences in key determinants of RESP participation (e.g., family wealth and parental education). The third contribution is to examine the relationship between having an RESP account and attending a postsecondary institution up to age 27.

The current study uses the 1999 and 2012 versions of the SFS to examine differences in RESP holdings across the income distribution among families with school-age children, as well as the factors underlying these differences.[1] Two outcomes are examined: the proportion of families holding an RESP and the average (mean) dollar value of RESP holdings among all families in the sample (including those with no RESP).

To examine the relationship between access to an RESP and postsecondary enrolment, the study turns to the Youth in Transition Survey, Cohort A (YITS-A) and the Programme for International Student Assessment (PISA) (Statistics Canada n.d.*a*). YITS-A and PISA data have been used extensively to study the factors underlying postsecondary enrolment (e.g., Finnie et al. 2008, 2010). In addition, the data are linked to the T1 Family File (T1FF), which contains identifiers for postsecondary enrolment. Importantly, the match rate is almost 96%, which helps address the attrition issues in the original survey panel. Postsecondary enrolment from age 19 to 27 is examined.

The next section provides a brief overview of the main features of RESPs and highlights important changes that have been implemented over time (particularly during the 1999-to-2012 period). Then, Section 3 describes the data used in the study, as well as the sample selection and analytical methods. Section 4 presents the main results. The conclusion (Section 5) summarizes the study.

1. The 2005 SFS is not used in this study since the sample size is too small to support the analysis to follow.

2 Overview of the history of registered education savings plans

Since 1974,[2] Canadians have been able to save for postsecondary education in a tax-sheltered vehicle known as an RESP. Subscribers can contribute to the plan, which is held by the promoter (e.g., a bank) and available to a named beneficiary. Although contributions to RESPs cannot be deducted from taxable income, any accumulated earnings are tax-free.

The first major changes to RESPs were implemented in the 1996 and 1997 federal budgets, and they resulted in an increase in annual contributions to $4,000 and an increase in total (lifetime) contributions to $42,000. The 1997 budget also allowed siblings under the age of 21 to replace named beneficiaries without tax implications.

In the following year, the Canada Education Savings Grant (CESG) was introduced, whereby the federal government matched subscriber contributions to RESPs at a rate of 20% on the first $2,000 in any given year up to a lifetime maximum of $7,200. Unused CESG amounts would accumulate for children (RESP beneficiaries or not) up to the end of the calendar year in which they turn 17 years old[3] and could be carried forward for possible use in future years. A maximum of $1,000 could be paid into an RESP in any given year, up to a lifetime maximum of $7,200. In addition to siblings, named beneficiaries could also be replaced by blood or adoptive relatives of the subscriber, as long as they were under the age of 21.

Other broad changes included an end to the annual contribution limit for tax purposes in 2007 and an increase of the lifetime contribution limit to $50,000 in the same year. In 2008 some restrictions were eased on drawing money from the plan to use for postsecondary education (specifically, the maximum life of an RESP was extended to 35 years, a six-month grace period for making withdrawals in the event of delayed applications was offered, and part-time students were made eligible for RESP withdrawals). The 20% government top-up through the CESG was also extended to the first $2,500 in annual contributions in 2007.

Some provinces have decided to offer additional incentives by matching a portion of RESP contributions. During the study period, these included Alberta and Quebec.[4]

Until 2004, all families, regardless of income, were offered the same incentive to invest in their children's education. With the 2004 budget, low- and middle-income families became eligible for the Additional Canada Education Savings Grant (A-CESG). Families with net family income below $38,832 would receive an additional 20 cents (on top of the regular CESG) for every dollar contributed to the RESP. Those with net family income between $38,833 and $77,769 were eligible for an additional 10 cents per dollar contributed. These income thresholds have been indexed every year since then, reaching $45,282 and $90,563 in 2016. The maximum universal CESG is $500 per year (assuming no carry-forward amount). Low-income families can receive a maximum of $100 through the A-CESG (for a total maximum CESG of $600), while middle-income families can receive a maximum of $50 through the A-CESG (for a total maximum CESG of $550). With the carry-forward amount from the universal CESG, these figures are increased by $500. However, note that the A-CESG cannot be carried forward. In addition, A-CESG amounts do not count against grant room (unused universal CESG amounts) to be carried forward.

2. The information provided in this section is drawn from Donnelly, Welch and Young (1999), and Girdharry, Simonova and Lefebvre (2010), as well as the Department of Finance (1996, 1997, 1998, 2004, 2007, 2008). Only the features of and changes to the incentives associated with RESPs are discussed in this section.
3. Certain conditions apply after the year in which a child turns 15. For additional information, please refer to the *Canada Education Savings Grant – eligibility* (Government of Canada n.d.).
4. Since the end of the study period, Saskatchewan and British Columbia have also enacted related policies, while the incentives in Alberta have been removed.

In the same budget, children born after 2003 whose families had already qualified for the National Child Benefit Supplement (NCBS)[5] became eligible for the Canada Learning Bond (CLB). The only other qualifying restriction was the existence of an RESP, but no actual contributions had to be made. Upon the opening of an RESP account, the government would contribute $500, followed by $100 per eligible year for the first 15 years of the child's life (for a maximum total contribution of $2,000).

In summary, the RESP is a postsecondary education savings vehicle through which earnings on contributions are tax-exempt. The federal government provides additional contributions through the CESG for everyone who contributes to RESPs. Over the study period (1999 to 2012), additional contributions have been initiated and geared either towards residents of certain provinces (through programs in Alberta and Quebec) or towards low- and middle-income families at the national level (through the A-CESG and the CLB).

3 Data and methods

The first part of the study investigates RESP participation by quintile of family income among economic families with at least one school-age child (under 18 years of age). To do so, the study uses the 1999 and 2012 versions of the SFS.[6] The SFS is a cross-sectional survey that covers households living in the 10 provinces. Most respondents chose to allow Statistics Canada to try to link their survey responses to income tax data, to reduce response burden. The SFS sample contains 5,218 economic families with at least one child under age 18 in the 1999 survey and 3,027 such families in the 2012 survey.

The SFS contains information on the dollar value of the components of wealth (or net worth), including RESP holdings. From this, two outcome variables are created: a binary indicator of an RESP account and a continuous variable indicating the dollar value of RESP holdings (among all families with school-age children, including those with no RESP account).

A Blinder–Oaxaca decomposition approach is used to account for differences in the probability of RESP participation between families in the top and bottom income quintiles. In short, the difference in probability is decomposed into a portion explained by differences in socioeconomic characteristics and an unexplained portion. Pooled coefficients (from regressions including families in the top and bottom income quintiles) are used to weight the explained portion of the decompositions. Families are grouped into quintiles of equivalent after-tax income based on fixed thresholds (from the 2012 survey), thus enabling comparisons over time. To obtain equivalent income, after-tax income is divided by the square root of the number of family members.

For the dollar value of RESP holdings, a tobit model is used, given that the data have many zeros. In this model, variables are introduced incrementally to assess their marginal contribution in explaining the difference in the outcome variable across income quintiles.[7]

For both models, the key independent variables are net worth (wealth, or assets less debts) and parental education. Families with lower wealth may be less able to afford investing in their children's education, including through the RESP vehicle. Since it is possible that total wealth may be determined in part by RESP holdings, the primary measure of wealth used in this study excludes RESPs. However, it is also possible that RESP contributions do not affect total wealth

5. The eligibility cut-off for the NCBS varies according to the number of children and is generally close to the lower threshold for the A-CESG.
6. The thresholds in equivalent 2012 dollars were $22,192 (20th percentile), $32,072 (40th percentile), $41,180 (60th percentile) and $55,960 (80th percentile). The 20th percentile corresponds roughly to the cut-offs for the A-CESG for low-income families and the CLB.
7. Although it is possible to decompose differences in censored variables in Stata, it is not possible to compute the contribution of individual factors (Sinning, Hahn and Bauer 2008).

in the family (i.e., the family may simply move assets to invest in RESPs). To allow for this possibility, supplementary estimates are also produced from a wealth measure that includes RESP holdings. Parental education may also influence a family's decision to invest in RESPs, particularly if parents expect their children to follow the same educational pathway they did.

The SFS data include a host of other potential determinants of RESP holdings that are used in this study, including the age and marital status of the parent or parents, the number of children and the age of these children, and geographic information (region, and urban or rural status). Supplementary results also incorporate a measure of parental immigrant status.

The second part of the study focuses on the relationship between RESP participation and postsecondary enrolment. To do so, the study turns to the YITS-A and PISA. The target population consisted of students born in 1984. A random sample of schools in the 10 provinces where students born in 1984 were enrolled was taken in April or May 2000. The target students in these schools were then sampled.

The PISA portion involved a two-hour written test of reading, followed by a test of either mathematics or science. All students took the reading test, which was the main focus of the overall assessment. Immediately after the reading test, about half of the students were randomly assigned the mathematics test, and the other half was assigned the science test. The PISA assessment focused on the practical application of knowledge that students were expected to have acquired in the classroom. Exam results were standardized to have an average of 500 and a standard deviation of 100 across countries of the Organisation for Economic Co-operation and Development. A background survey was also administered to students and to school administrators.

In 2000 (cycle 1) the YITS-A consisted of a student questionnaire (to complement the PISA student survey) and a parent questionnaire. Although students were re-interviewed every two years on five separate occasions, these data are not necessary for this study because the YITS is now linked to the T1FF. In the T1FF data, individuals are classified as having enrolled in a postsecondary program if they claimed a positive amount of tuition, education, and textbook credits in Schedule 11 of their personal income tax form (T1 General tax form). Postsecondary students at qualifying institutions receive a T2202A form (*Tuition, Education, and Textbook Amounts Certificate* form) for the tuition amount, and a T2202 form (*Education and Textbook Amounts Certificate* form) for the education and textbook amount. Students may use this information to claim these amounts as non-refundable tax credits (i.e., the amounts can be used to reduce taxes owing, but are non-refundable beyond the amount of taxes owing). If students cannot apply all of their credits towards their taxes in a given year, they may opt to transfer some or all of their credits to their spouse or common-law partner, or to a parent or grandparent, or to a parent or grandparent of their spouse or common-law partner. Alternatively, they may carry-forward some or all of the credit amounts to a future tax year. In any of these cases, a Schedule 11 form must be filled out, which allows for the identification of students who are enrolled in a postsecondary program during the appropriate tax year. However, no distinction can be made between different forms of postsecondary schooling in the tax data.

An important advantage of following YITS-A respondents through the tax data is the lack of attrition. Overall, 95.9% of cycle 1 YITS-A respondents in the analytical sample were matched to the T1FF, or 20,084 out of 20,939.[8] In contrast, about half of YITS-A respondents had left the sample by cycle 5 (i.e., age 23 or 24).

The approach used in this portion of the study is to estimate linear probability models of postsecondary enrolment by a certain age (ranging from 19 to 27). Information from YITS-A cycle 1 forms the basis for the independent variables. Key in this information is a binary indicator

8. The only individuals dropped in the analytical sample are those with at least one missing value for any of the variables used in the analysis.

of RESP participation provided by the parent or parents.[9] Other key determinants included in the model are equivalent total family income, PISA reading scores, overall high school marks, an index of non-cognitive skills (mastery and self-esteem), parental presence indicators and parental education. The model also includes additional key determinants: a subjective student assessment of the value of schooling, the extent to which the student's friends plan to pursue postsecondary education, region, a female indicator variable, and an index of school quality (based on the proportion of the student's peers who eventually pursued postsecondary education or attended university, depending on the model). See Frenette (2007) for more details on the construction of these variables. Results are generated by income quintiles and by sex.

Although this approach cannot be described as causal or quasi-causal, the richness of the covariates is noteworthy and should form the basis for a very strong descriptive analysis of the relationship between RESP use and access to postsecondary education. Furthermore, a key dimension of the analysis is its focus on the evolution of this relationship over time, as youth age from 19 to 27. Many studies focus on postsecondary enrolment shortly after high school graduation. This is clearly important, as earlier enrolment implies more potential years of labour market participation. However, studies of access to postsecondary education often do not follow patterns of postsecondary enrolment over time. Some groups may narrow the enrolment gap as they age, and this is an important element that is covered in the analysis to follow.

4 Results

4.1 Registered education savings plan holdings by family income and factors behind the differences

This section begins with statistics on RESP participation and the average dollar value of holdings, based on the SFS data. Overall, 15.9% of economic families with school-age children held an RESP in 1999 (Table 1). On average, families held $1,325 in RESPs (this average includes families who did not hold an RESP).

RESP savings varied considerably by family socioeconomic characteristics. For the most part, this variation mirrored similar patterns found in the literature on postsecondary enrolment and socioeconomic characteristics (see Frenette 2007). Importantly, savings increased monotonically with family income. For example, 31.8% of families in the top income quintile had an RESP account, compared with 9.8% of families in the bottom income quintile. The mean value of RESPs was about four times higher among families at the top compared with those at the bottom of the distribution.

Investments in RESPs also tended to increase with net worth (less RESPs), parental education and parental age (up to age 35, after which RESP participation tended to level off). Married couples, as well as families living in urban areas, also tended to invest more in RESPs (compared with lone parents and rural families, respectively). Table 1 also shows that there was little variation in RESP participation by age of youngest and oldest children. As Milligan (2004) pointed out, the age of children may reflect incentives that were available when the children were growing up.

Families in Quebec tended to invest less in RESPs than families in other parts of the country; this may reflect the lower rate of university enrolment in Quebec. It may also reflect the fact that families in the bottom income quintile were more likely to live in Quebec than those in the top income quintile (see Table 2). In addition, families with two children generally had more RESP

9. Finnie and Wismer (2012) concluded that for postsecondary attendance, whether the family saved at all matters far more the amount saved.

holdings than those with one child, but the dollar value of RESP holdings was only slightly greater among families with three or more children, compared with those with two children.[10]

Between 1999 and 2012, overall RESP participation roughly tripled, reaching 46.7% in 2012. The dollar value of average RESP holdings roughly quintupled over this period, reaching $6,878 in 2012. The 1999-to-2012 period saw the introduction of key RESP investment incentives described in Section 2 of this paper. This section also described how many of the incentives targeted lower-income families. Results in Table 1 suggest that RESP participation and the average dollar value of holdings indeed increased considerably between 1999 and 2012 for families in the bottom income quintile. However, the average dollar value of RESP holdings increased more in both absolute terms and relative terms for families in the top income quintile compared with those in lower parts of the income distribution (including those at the bottom). For example, families in the top quintile held $2,388 more in RESPs than those in the bottom quintile in 1999, on average. By 2012 this gap had increased to $13,843. In relative terms, the average dollar value of RESP holdings was 4.2 times higher among families in the top income quintile than among those in the bottom quintile in 1999. In 2012 this ratio stood at 7.7.[11]

10. As shown in Table 2, families in the bottom income quintile were far more likely to have three or more children than families in the top income quintile, so the lower RESP participation among families with three or more children may simply reflect an income effect.
11. One possible factor behind the faster growth at the top of the income distribution is the increase in the lifetime RESP contribution implemented in the late 1990s.

Table 1
Registered education savings plan holdings of economic families with children

	1999		2012	
	Have an RESP	Mean value of RESPs (including non-holders)	Have an RESP	Mean value of RESPs (including non-holders)
	proportion	2012 constant dollars	proportion	2012 constant dollars
Overall	0.159	1,325	0.467	6,878
After-tax income quintile				
Bottom	0.098	746	0.253	2,072
Second	0.134	888	0.360	3,676
Third	0.177	1,271	0.460	5,162
Fourth	0.226	2,404	0.585	7,535
Top	0.318	3,134	0.679	15,915
Net worth (less RESPs) quintile				
Bottom	0.066	397	0.195	831
Second	0.139	668	0.341	2,061
Third	0.160	1,136	0.455	3,972
Fourth	0.238	2,285	0.613	8,755
Top	0.327	4,879	0.732	18,752
Highest parental education				
No high school diploma	0.048	214	0.120	389
High school diploma	0.117	660	0.213	3,398
Non-university postsecondary certificate	0.141	1,181	0.403	4,574
Bachelor's degree	0.246	2,089	0.620	8,551
Above a bachelor's degree	0.299	3,032	0.688	14,266
Age of oldest parent				
Under 30 years old	0.098	220	0.254	778
30 to 34 years	0.170	699	0.378	2,512
35 to 39 years	0.157	1,231	0.493	5,341
40 to 44 years	0.156	1,344	0.522	6,716
45 to 49 years	0.184	2,214	0.495	8,754
50 to 54 years	0.176	2,330	0.507	14,287
55 years old or over	0.163	1,320	0.464	10,326
Married or common-law couple	0.178	1,489	0.510	7,658
Lone parent	0.066	523	0.245	2,763
One child	0.139	926	0.426	5,069
Two children	0.183	1,568	0.506	8,126
Three or more children	0.152	1,711	0.477	8,326
Age of youngest child				
0 to 4 years	0.187	897	0.479	4,059
5 to 9 years	0.163	1,917	0.490	7,846
10 to 14 years	0.151	1,550	0.460	8,274
15 to 17 years	0.092	969	0.416	10,658
Age of oldest child				
0 to 4 years	0.201	679	0.453	1,919
5 to 9 years	0.178	1,880	0.547	7,701
10 to 14 years	0.162	1,315	0.458	7,428
15 to 17 years	0.110	1,325	0.430	9,614
Atlantic provinces	0.163	1,302	0.462	5,360
Quebec	0.110	622	0.362	3,881
Ontario	0.183	1,579	0.502	8,800
Prairie provinces	0.164	1,842	0.493	7,190
British Columbia	0.175	1,240	0.516	6,637
Urban	0.165	1,374	0.483	7,296
Rural	0.137	1,133	0.379	4,519

Notes: The sample sizes are 5,218 for 1999 and 3,027 for 2012. RESP: registered education savings plan. All variables are measured at the economic family level. Net worth and after-tax income are measured in equivalent dollars, obtained by dividing by the square root of the number of individuals in the economic family. Quintile thresholds from 2012 are applied to both years.

Sources: Statistics Canada, 1999 and 2012 Survey of Financial Security.

Table 2 shows how all of the socioeconomic characteristics used in this study differ between families in the bottom and top quintiles of the income distribution. Compared with families in the top income quintile, those in the bottom quintile had a lower net worth, included parents with lower levels of education, included younger parents, were more likely to be lone-parent families, were more likely to include three or more children, were less likely to include children between the ages of 15 and 17, were more likely to live in Quebec, and were more likely to be in a rural area.

These differences in socioeconomic characteristics between families in the top and bottom income quintiles may partially explain why families at the top had more RESP savings than those at the bottom. In particular, Table 1 demonstrates a strong positive correlation between net worth and parental education on the one hand and RESP savings on the other.

To better understand what lies behind the gap in RESP savings between upper- and lower-income families, Table 3 shows the results of the Blinder–Oaxaca decompositions.[12] In the 1999 results, 31.8% of families in the top income quintile had an RESP, compared with 9.8% of families in the bottom income quintile (as shown in Table 1). The difference (21.9 percentage points) was then decomposed into an explained and an unexplained portion. Overall, 13.6 percentage points of the 21.9 percentage point difference (or 61.9%) could be explained by differences in socioeconomic characteristics. Differences in two factors accounted for almost all of the explained portion. Specifically, differences in net worth (less RESPs) accounted for 7.7 percentage points, or 35.2%, of the overall difference in the RESP participation rate between families in the top and bottom income quintiles, while differences in parental education accounted for 5.2 percentage points (23.9%) of the overall difference.

12. The detailed regression results underlying the decompositions are available upon request.

Table 2
Sample characteristics of economic families with children, by income quintile

	1999		2012	
	Bottom quintile	Top quintile	Bottom quintile	Top quintile
	proportion			
Net worth (less RESPs) quintile				
Bottom	0.470	0.024	0.525	0.019
Second	0.319	0.093	0.213	0.063
Third	0.123	0.152	0.108	0.127
Fourth	0.055	0.366	0.102	0.273
Top	0.033	0.365	0.051	0.518
Highest parental education				
No high school diploma	0.241	0.008	0.122	0.003
High school diploma	0.172	0.054	0.253	0.063
Non-university postsecondary certificate	0.456	0.314	0.353	0.226
Bachelor's degree	0.089	0.277	0.188	0.368
Above a bachelor's degree	0.041	0.347	0.084	0.340
Age of oldest parent				
Less than 30 years old	0.163	0.018	0.164	0.018
30 to 34 years	0.196	0.093	0.170	0.069
35 to 39 years	0.241	0.205	0.175	0.159
40 to 44 years	0.196	0.251	0.199	0.256
45 to 49 years	0.117	0.212	0.149	0.236
50 to 54 years	0.062	0.169	0.112	0.178
55 years old or over	0.025	0.051	0.031	0.084
Married or common-law couple	0.653	0.970	0.609	0.961
Lone parent	0.347	0.030	0.391	0.039
One child	0.376	0.549	0.437	0.470
Two children	0.403	0.350	0.332	0.432
Three or more children	0.221	0.100	0.231	0.098
Age of youngest child				
0 to 4 years	0.411	0.294	0.424	0.311
5 to 9 years	0.273	0.212	0.257	0.201
10 to 14 years	0.234	0.253	0.227	0.253
15 to 17 years	0.082	0.241	0.092	0.236
Age of oldest child				
0 to 4 years	0.194	0.205	0.258	0.179
5 to 9 years	0.254	0.204	0.192	0.223
10 to 14 years	0.331	0.234	0.336	0.212
15 to 17 years	0.221	0.357	0.214	0.386
Atlantic provinces	0.101	0.043	0.073	0.055
Quebec	0.292	0.138	0.215	0.159
Ontario	0.335	0.509	0.420	0.459
Prairie provinces	0.155	0.181	0.158	0.208
British Columbia	0.117	0.129	0.134	0.119
Urban	0.755	0.944	0.843	0.903
Rural	0.245	0.056	0.157	0.097
	number			
Sample size	1,725	622	588	731

Notes: RESP: registered education savings plan. All variables are measured at the economic family level. Net worth and after-tax income are measured in equivalent 2012 constant dollars. Equivalent dollars are obtained by dividing by the square root of the number of individuals in the economic family. Quintile thresholds from 2012 are applied to both years.

Sources: Statistics Canada, 1999 and 2012 Survey of Financial Security.

Table 3
Blinder–Oaxaca decomposition of the difference in the probability of holding an RESP between economic families in the top and bottom income quintiles

	1999		2012	
	coefficient	bootstrap standard error	coefficient	bootstrap standard error
Top after-tax income quintile	0.318 ***	0.028	0.679 ***	0.023
Bottom after-tax income quintile	0.098 ***	0.011	0.253 ***	0.025
Top after-tax income quintile minus bottom after-tax income quintile	0.219 ***	0.030	0.426 ***	0.035
Explained portion of difference	0.136 ***	0.028	0.302 ***	0.051
Unexplained portion of difference	0.083 †	0.044	0.123 †	0.070
Detailed explained components				
Net worth (less RESPs)	0.077 **	0.025	0.184 ***	0.044
Parental education	0.052 **	0.017	0.103 ***	0.023
Parental age	0.007	0.009	-0.008	0.017
Parental marital status	0.007	0.006	0.031 *	0.015
Number of children	-0.008	0.005	-0.012	0.008
Age of youngest child	0.004	0.007	0.003	0.018
Age of oldest child	-0.011 †	0.006	-0.009	0.013
Region	0.008 †	0.005	0.005	0.005
Urban/rural status	-0.001	0.005	0.005	0.003

* significantly different from reference category ($p < 0.05$)

** significantly different from reference category ($p < 0.01$)

*** significantly different from reference category ($p < 0.001$)

† significantly different from reference category ($p < 0.10$)

Notes: RESP: registered education savings plan. All variables are measured at the economic family level. All dollar figures are expressed in 2012 constant dollars. Net worth and after-tax income are measured in equivalent dollars, obtained by dividing by the square root of the number of individuals in the economic family.

Sources: Statistics Canada, 1999 and 2012 Survey of Financial Security.

Although the gap in RESP participation between families in the top and bottom income quintiles almost doubled between 1999 and 2012 (from 21.9 to 42.6 percentage points), the decomposition results are fairly similar. Overall, 30.2 of the 42.6 percentage points (71%) could be explained by differences in socioeconomic characteristics. Once again, differences in net worth (less RESPs) and parental education played key roles, accounting for 43.3% and 24.2% of the overall difference in RESP participation rates across income quintiles. In addition, differences in marital status played a smaller yet non-negligible role, accounting for 7.3% of the overall difference in RESP participation.

The contribution of differences in socioeconomic characteristics to the overall difference in the dollar value of RESP holdings across income quintiles was assessed with a stepwise tobit model (Table 4). The first model included only a dummy variable indicating that a family was in the top income quintile, as opposed to the bottom income quintile (see the row labelled "No covariates" in Table 4).

For 1999, the marginal effect of being in the top income quintile was $16,010. This represents the overall gap in the dollar value of RESPs. When net worth (less RESPs) was included, this marginal effect dropped to $6,982, implying that this factor accounted for $9,029 (or 56.4%) of the overall gap in the dollar value of RESPs. Adding parental education to the model implies a $4,252 (or 26.6%) contribution. However, since different covariates were already in the model when these two factors were included, their contribution can be attributable in part to the order of

their inclusion in the model. The two factors were also included in reverse order, and this led to somewhat different results (at least quantitatively), shown at the bottom of the table. Specifically, net worth (less RESPs) now accounted for 42.1% of the overall gap, while parental education accounted for 40.9% of the overall gap. Thus, differences in net worth (less RESPs) accounted for between 42.1% and 56.4% of the overall gap in the dollar value of RESPs between families in the top and bottom income quintiles, while differences in parental education accounted for between 26.6% and 40.9% of the gap. Note that when these two factors were included later in the model, their contribution remained within these ranges. Other variables did not contribute towards the gap in the dollar value of RESP holdings.

Table 4
Marginal effect of being in the top income quintile compared with the bottom income quintile on RESP holdings—stepwise tobit regression results

	1999		2012	
	marginal effect	bootstrap standard error	marginal effect	bootstrap standard error
No covariates	16,010 ***	2,866	34,486 ***	4,885
Add net worth (less RESPs)	6,982 **	2,608	13,068 ***	3,362
Add parental education	2,729	2,527	7,626 *	3,369
Add parental age	2,996	2,566	7,520 *	3,386
Add parental marital status	2,534	2,535	6,366	8,182
Add number of children	2,995	2,608	8,182 *	3,481
Add age of youngest child	3,520	2,531	7,859 *	3,491
Add age of oldest child	3,921	2,466	8,080 *	3,553
Add region	3,006	2,456	7,784 *	3,664
Add urban/rural status	2,941	2,443	7,691 *	3,654
No covariates	16,010 ***	2,866	34,486 ***	4,885
Add parental education	9,469 ***	2,429	24,943 ***	3,947
Add net worth (less RESPs)	2,729	2,527	7,626 *	3,369

* significantly different from reference category ($p < 0.05$)

** significantly different from reference category ($p < 0.01$)

*** significantly different from reference category ($p < 0.001$)

Notes: RESP: registered education savings plan. All variables are measured at the economic family level. All dollar figures are expressed in 2012 constant dollars. Net worth and after-tax income are measured in equivalent dollars, obtained by dividing by the square root of the number of individuals in the economic family.

Sources: Statistics Canada, 1999 and 2012 Survey of Financial Security.

The results for 2012 suggest that differences in net worth (less RESPs) played a more important role than in 1999, while differences in parental education played a smaller role in 2012. Specifically, differences in net worth (less RESPs) accounted for 50.2% to 62.1% of the overall gap, while differences in parental education accounted for 15.8% to 27.7% of the overall gap. Once again, other variables played little to no role.

The appendix contains four tables that show results of robustness tests for the Blinder–Oaxaca decompositions and tobit stepwise regressions.

First, it is well-documented that children of immigrants are more likely to attend university than children of Canadian-born parents. At the same time, immigrants generally have lower incomes than Canadian-born individuals, despite the fact that they are more likely to have a university

education.[13] These facts may confound some of the results already presented. In Appendix Tables 1 and 2, results of the Blinder–Oaxaca and stepwise tobit regression models from Tables 3 and 4 are shown after the inclusion in the model of a dummy variable indicating that at least one of the parents is an immigrant. The results are almost identical to those in Tables 3 and 4. In addition, the immigrant variable contributed very little to the differences in RESP holdings between families in the top and bottom income quintiles.

Second, Appendix Tables 3 and 4 also replicate Tables 3 and 4 from the main body of the paper, but include RESPs in the definition of net worth. Recall that this introduces endogeneity in the models if families increase their total savings when they invest in RESPs (as opposed to simply moving assets into RESPs). The results are qualitatively similar to those reported in Tables 3 and 4, although the roles played by net worth are now somewhat larger.

While a significant portion of the gap in RESP holdings by income quintile can be explained by differences in net worth and parental education, a non-negligible portion remains unexplained in both years.

One possible explanation that cannot be examined with the SFS data is differences in awareness of RESPs and their associated benefits (the CESG and CLB). The 2013 Survey of Approaches to Educational Planning (Statistics Canada n.d.*b*) provides some insight in this regard. The parents of children under the age of 18 were less likely to have an RESP available for the child if they were in the bottom quintile of the equivalent household income distribution (27.8% of a sample of 1,688) than if they were in the top quintile (69.1% of a sample of 1,881). This is in line with results from the SFS and YITS-A. Awareness of the CESG and the CLB was generally low among households in the bottom income quintile. Indeed, 49.3% of parents in the bottom quintile were aware of the CESG, compared with 74.0% of parents in the top quintile. Despite the fact that the CLB is available only to lower-income families, awareness was similar across the income distribution: 38.0% of parents in the bottom income quintile were aware of the CLB, compared with 34.8% of parents in the top quintile.

The data also suggest that 39.6% of households in the bottom income quintile had savings earmarked for a child's postsecondary education, but, in 29.8% of these cases, they had avoided using RESPs. Among this group with postsecondary savings but no RESP, the most common reason for not having an RESP was a lack of awareness (40.4%). Among households in the top income quintile, 83.3% had postsecondary education savings assigned to the child, but only 17.1% of them did not have an RESP. Furthermore, 9.6% of households in the top quintile with postsecondary savings but no RESP listed a lack of awareness as a reason for not having an RESP.[14]

4.2 Registered education savings plan participation and postsecondary enrolment

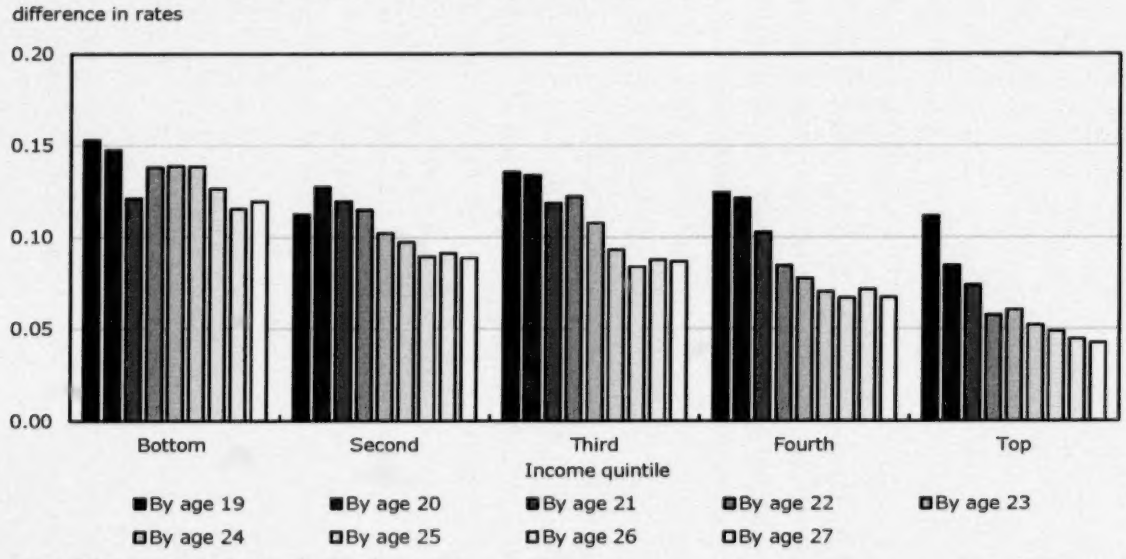
Does it matter that RESP participation is lower among lower-income families? Perhaps the most relevant outcome is postsecondary enrolment, since this is the intended goal of RESPs. To examine this issue, the study now turns to estimating the relationship between RESP participation and the postsecondary enrolment of youth. YITS-A and T1FF data are used in this case.

13. See Picot and Sweetman (2012) for an overview of immigrant outcomes.
14. Knowledge of how RESPs and their related benefits work could also have been a factor. In December 2007 and January 2008, EKOS Research Associates surveyed 901 parents of children under the age of 18 whose household income was no more than $38,000 (EKOS Research Associates 2008). The study found that only half of those who were aware of RESPs or CESGs could accurately describe them. The study also found that there were many misconceptions regarding how RESPs and CESGs worked. An important caveat relates to the response rate in this study. Of the 249,804 in-scope units, 37,387 responded to the survey (15%). Of these responding units, 23% completed the survey. Thus, 3.4% of in-scope households responded and completed the survey.

The data suggest that 10.2% of 15-year-olds in families in the bottom quintile of the total family income distribution held an RESP at the time of the survey (the year 2000). Among 15-year-olds in the top quintile, 31.0% held an RESP. These figures are very close to the corresponding numbers in Table 1, which show that 9.8% of families in the bottom quintile with children under the age of 18 had an RESP in 1999, compared with 31.8% of families in the top quintile. Since the YITS-A and T1FF data enable the tracking of individuals into postsecondary education, it is also possible to examine results by sex. In terms of RESP accounts, the rates were similar for boys and girls (just over 21% in both cases).

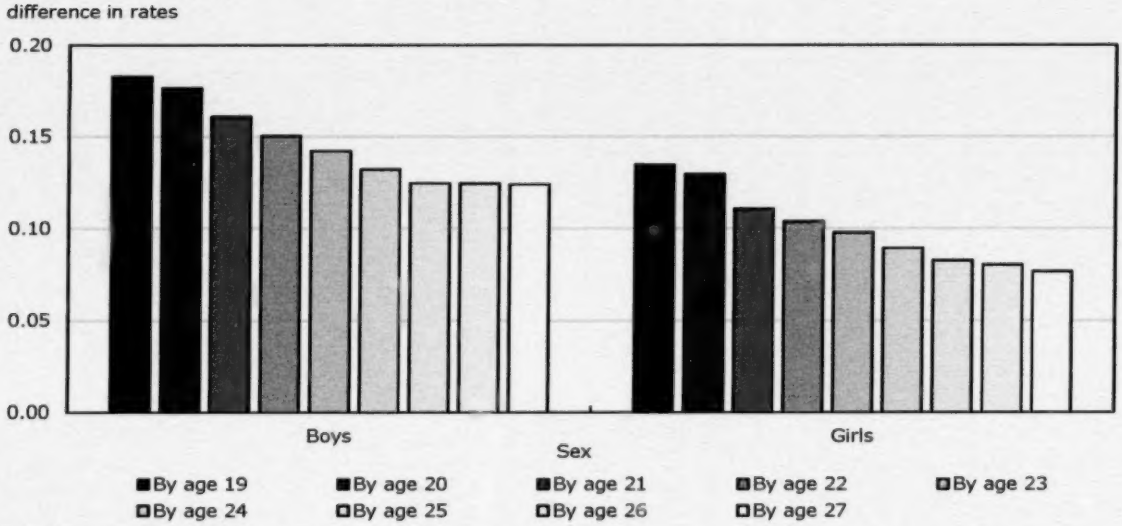
Chart 1 shows the differences in the proportion of youth with and without an RESP account who ever pursued postsecondary education by a given age (ranging from 19 to 27), by family income quintile (at age 15). Chart 2 shows the same by sex. In all cases, the differences in postsecondary enrolment rates were positive. In general, the differences were highest among youth from the bottom income quintile and lowest among youth from the top income quintile. However, the variation in these differences in enrolment rates by income quintile were not large. More notably, the differences in enrolment rates between RESP holders and non-holders were about twice as large among boys as among girls.

Chart 1
Difference in postsecondary enrolment rates between RESP holders and non-holders, by income quintile and age



Note: RESP: registered education savings plan.
Sources: Statistics Canada, Youth in Transition Survey, Cohort A, cycle 1, and T1 Family File, 2001 to 2011; Organisation for Economic Co-operation and Development, Programme for International Student Assessment.

Chart 2
Difference in postsecondary enrolment rates between RESP holders and non-holders, by sex and age



Note: RESP: registered education savings plan.

Sources: Statistics Canada, Youth in Transition Survey, Cohort A, cycle 1, and T1 Family File, 2001 to 2011; Organisation for Economic Co-operation and Development, Programme for International Student Assessment.

Over time, the differences tended to decline for youth from all parts of the income distribution, as well as for boys and girls, suggesting that youth without an RESP account had, to some extent, narrowed the gap in enrolment rates throughout their early to mid-20s.

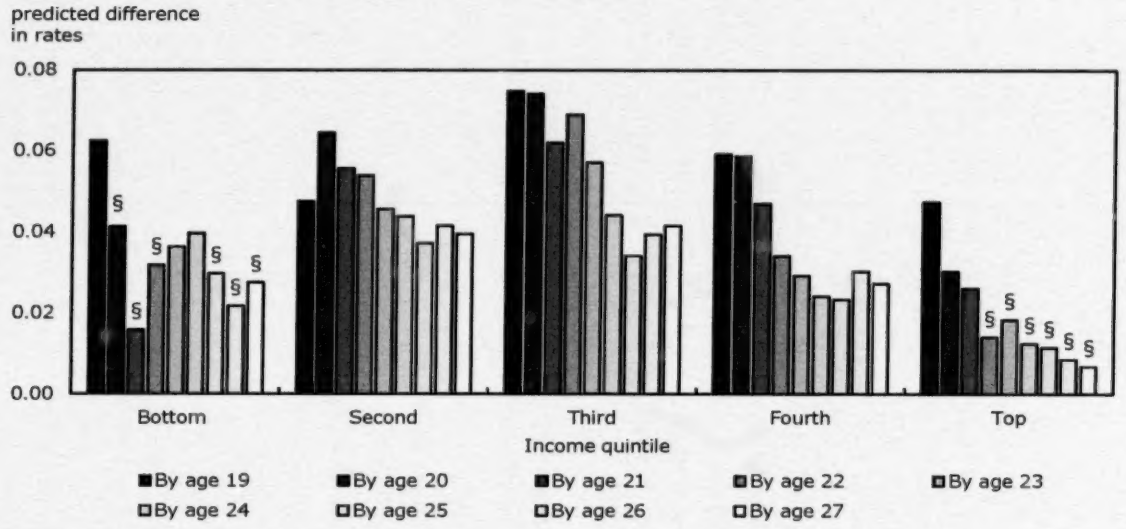
The differences in enrolment rates shown in Charts 1 and 2 do not take into account other factors that are associated with postsecondary enrolment. Results from Appendix Table 5 suggest that there were considerable differences in key determinants of postsecondary enrolment between RESP account holders and non-holders. Moreover, these differences were more pronounced in some segments of the income distribution than in others and were more pronounced for boys than for girls.

For example, parental education is perhaps the strongest correlate of postsecondary enrolment. Among youth in the bottom income quintile, 62.9% of RESP account holders had at least one parent with a postsecondary qualification, compared with 44.0% of non-RESP account holders (a difference of 18.9 percentage points). In contrast, 87.5% of RESP account holders in the top income quintile had at least one parent with a postsecondary qualification, compared with 78.6% of non-RESP account holders (a difference of 8.9 percentage points).

Another strong correlate of postsecondary enrolment is academic performance. Among boys, 80.1% of RESP account holders maintained a grade-point average of 70% or more in school at age 15, compared with 66.5% of non-RESP account holders (a difference of 13.7 percentage points). Among girls, the gap was somewhat smaller, at 9.3 percentage points.

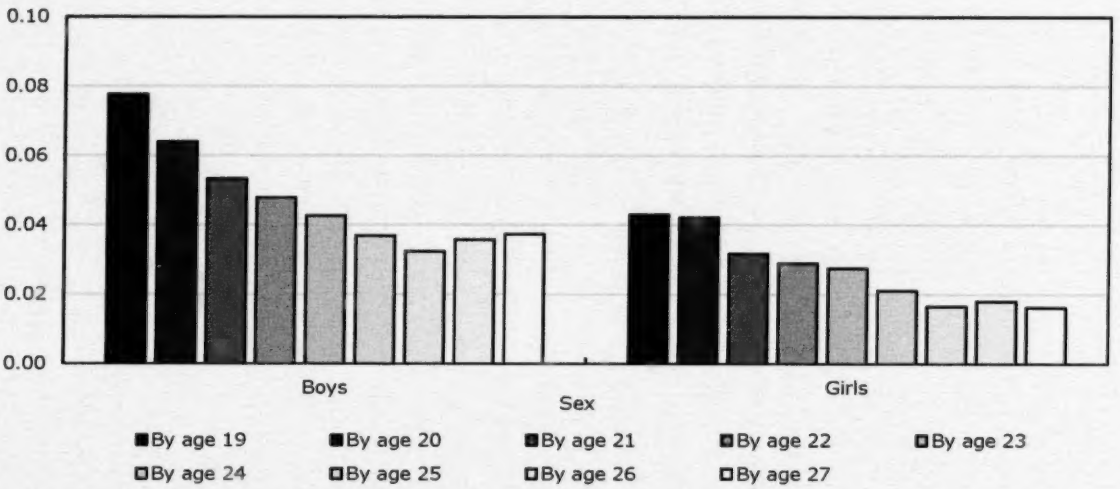
Appendix Table 5 also shows other important differences in socioeconomic characteristics between RESP account holders and non-holders. These differences were taken into account in linear probability models of postsecondary enrolment on RESP-account-holding status. The models were run separately by income quintile (at age 15) and by sex, and the results are shown in Charts 3 and 4, respectively. The detailed results appear in Appendix Tables 6-1 and 6-2.

Chart 3
Predicted difference in postsecondary enrolment rates between RESP holders and non-holders, by income quintile and age



§ not statistically significant at 10%
Note: RESP: registered education savings plan.
Sources: Statistics Canada, Youth in Transition Survey, Cohort A, cycle 1, and T1 Family File, 2001 to 2011; Organisation for Economic Co-operation and Development, Programme for International Student Assessment.

Chart 4
Predicted difference in postsecondary enrolment rates between RESP holders and non-holders, by sex and age



Note: RESP: registered education savings plan.
Sources: Statistics Canada, Youth in Transition Survey, Cohort A, cycle 1, and T1 Family File, 2001 to 2011; Organisation for Economic Co-operation and Development, Programme for International Student Assessment.

Many trends persisted even after differences in socioeconomic characteristics between RESP account holders and non-holders were accounted for. Overall, youth who had access to an RESP account still generally displayed a higher propensity to pursue postsecondary education than youth who did not have an RESP account. Furthermore, as was the case when differences in socioeconomic characteristics were not taken into account, the gaps in enrolment rates generally declined over time. In other words, youth with no access to an RESP account at age 15 narrowed the gap in enrolment over time. In addition, having an RESP was still about twice as strongly associated with postsecondary enrolment for boys as for girls.

Despite these similarities, some important differences emerged after differences in socioeconomic characteristics were taken into account. First, the gaps in postsecondary enrolment rates between RESP holders and non-holders became considerably smaller in most cases. For example, among youth in the bottom income quintile, the postsecondary enrolment rate by age 19 was 15.3 percentage points higher for RESP account holders, compared with non-holders. After the facts that non-holders generally registered poorer academic performance and had parents with lower levels of education were accounted for (among other factors), the enrolment rate gap at age 19 dropped to 6.2 percentage points. In addition, the gaps were no longer significant in certain cases. Specifically, statistical significance was lost for youth in the bottom and top income quintiles by age 27. In fact, after age 19, the enrolment rate gaps declined considerably for both groups and were often not statistically significant. For youth in the middle three income quintiles, statistically significant gaps persisted even by age 27. Taken together, these results suggest that the presence of an RESP account at age 15 was associated with increased early postsecondary enrolment across the income distribution and increased enrolment through age 27 for youth in the middle of the income distribution.

5 Conclusion

Registered education savings plans (RESPs) are available to assist parents in saving for their children's postsecondary education. Investments in RESPs appreciate tax-free, and contributions are supplemented by the federal government and, in some cases, by provincial governments. Earlier work by Milligan (2004) had already established that RESP savings are highly concentrated in high-income, high-wealth and high-education families. However, that analysis predates recent increases to government contributions for lower-income families. In addition, little attention has been paid to estimating the relationship between RESP participation and postsecondary enrolment.

This study makes three contributions to the knowledge base about RESPs. The first is to document differences in RESP holdings by family income and how these have evolved over time. The second is to decompose these differences (particularly between the top and bottom quintiles of family income) into portions that are related to differences in key determinants of RESP participation (e.g., family wealth and parental education) and unexplained factors. Finally, the third contribution is to examine the relationship between having an RESP account and attending a postsecondary institution.

The study finds that among families with children under the age of 18, RESP holding rates and average dollar amounts were higher for those in higher income quintiles. This pattern held for both years examined—1999 and 2012. While average RESP dollar holdings increased for families in all income quintiles throughout the period, they grew fastest among families in the top income quintile in both absolute terms and relative terms. The gap in RESP holdings between families at the top and bottom of the income distribution was largely attributable to higher wealth and (to a lesser extent) higher levels of parental education among families at the top of the distribution. A lower level of awareness of RESPs among families in the bottom income quintile may have also been a factor. In addition, the study finds that having access to an RESP account at age 15 was associated with higher postsecondary enrolment rates by age 19, independent of family income. The gap in postsecondary enrolment rates between RESP holders and non-holders declined over time in all income quintiles. By age 27, the association between RESPs and enrolment was still positive across the income distribution, but it was statistically significant only for youth in the second, third and fourth income quintiles. A positive association between RESP use and postsecondary enrolment was also found among boys and girls, both in the short term and in the long term; however, the association was about twice as strong among boys.

Finally, it is important to note that lower-income families have increased their RESP savings in recent years, following the introduction of the Additional Canada Education Savings Grant and the Canada Learning Bond in 2004. Currently, no national-level data sources are available to track the RESP holdings of youth after 2004 and their subsequent postsecondary enrolment patterns. This is an important caveat to the results of this study, which examines youth according to whether or not they had an RESP in 2000. Future research in this area would benefit from linking administrative data on RESP savings and tax data to examine this relationship.

6 Appendix tables

Appendix Table 1
Blinder–Oaxaca decomposition of the difference in the probability of holding an RESP between economic families in the top and bottom income quintiles (including immigrant covariate)

	1999		2012	
	coefficient	bootstrap standard error	coefficient	bootstrap standard error
Top after-tax income quintile	0.318 ***	0.028	0.679 ***	0.023
Bottom after-tax income quintile	0.098 ***	0.011	0.253 ***	0.025
Top after-tax income quintile less bottom after-tax income quintile	0.219 ***	0.030	0.426 ***	0.035
Explained portion of difference	0.128 ***	0.028	0.297 ***	0.051
Unexplained portion of difference	0.091 *	0.045	0.129 †	0.070
Detailed explained components				
Net worth (less RESPs)	0.078 **	0.025	-0.184 ***	0.044
Parental education	0.050 **	0.018	-0.102 ***	0.024
Parental age	0.005	0.009	0.009	0.018
Parental marital status	0.006	0.006	-0.030 †	0.016
Number of children	-0.009	0.005	0.012	0.009
Age of youngest child	0.005	0.007	-0.004	0.018
Age of oldest child	-0.011 †	0.006	0.009	0.014
Region	0.007	0.005	-0.005	0.005
Urban/rural status	-0.002	0.005	-0.004	0.003
Parental immigrant status	0.000	0.001	0.002	0.006

* significantly different from reference category ($p < 0.05$)

** significantly different from reference category ($p < 0.01$)

*** significantly different from reference category ($p < 0.001$)

† significantly different from reference category ($p < 0.10$)

Notes: RESP: registered education savings plan. All variables are measured at the economic family level. All dollar figures are expressed in 2012 constant dollars. Net worth and after-tax income are measured in equivalent dollars, obtained by dividing by the square root of the number of individuals in the economic family.

Sources: Statistics Canada, 1999 and 2012 Survey of Financial Security.

Appendix Table 2
Marginal effect of being in the top income quintile compared with the bottom income quintile on RESP holdings—stepwise tobit regression results (including immigrant covariate)

	1999		2012	
	marginal effect	bootstrap standard error	marginal effect	bootstrap standard error
No covariates	16,010 ***	2,866	34,486 ***	4,885
Add net worth (less RESPs)	6,982 **	2,608	13,068 ***	3,362
Add parental education	2,729	2,527	7,626 *	3,369
Add parental age	2,996	2,566	7,520 *	3,386
Add parental marital status	2,534	2,535	6,366	8,182
Add number of children	2,995	2,608	8,182 *	3,481
Add age of youngest child	3,520	2,531	7,859 *	3,491
Add age of oldest child	3,921	2,466	8,080 *	3,553
Add region	3,006	2,456	7,784 *	3,664
Add urban/rural status	2,941	2,443	7,691 *	3,654
Add parental immigrant status	3,499	2,539	7,453 †	3,881
No covariates	16,010 ***	2,866	34,486 ***	4,885
Add parental education	9,469 ***	2,429	24,943 ***	3,947
Add net worth (less RESPs)	2,729	2,527	7,626 *	3,369

* significantly different from reference category ($p < 0.05$)

** significantly different from reference category ($p < 0.01$)

*** significantly different from reference category ($p < 0.001$)

† significantly different from reference category ($p < 0.10$)

Notes: RESP: registered education savings plan. All variables are measured at the economic family level. All dollar figures are expressed in 2012 constant dollars. Net worth and after-tax income are measured in equivalent dollars, obtained by dividing by the square root of the number of individuals in the economic family.

Sources: Statistics Canada, 1999 and 2012 Survey of Financial Security

Appendix Table 3
Blinder–Oaxaca decomposition of the difference in the probability of holding an RESP between economic families in the top and bottom income quintiles (including RESPs in net worth)

	1999		2012	
	coefficient	bootstrap standard error	coefficient	bootstrap standard error
Top after-tax income quintile	0.318 ***	0.028	0.679 ***	0.023
Bottom after-tax income quintile	0.098 ***	0.011	0.253 ***	0.025
Top after-tax income quintile less bottom after-tax income quintile	0.219 ***	0.030	0.426 ***	0.035
Explained portion of difference	0.150 ***	0.028	0.320 ***	0.051
Unexplained portion of difference	0.069	0.044	0.106	0.070
Detailed explained components				
Net worth	0.097 ***	0.025	0.208 ***	0.044
Parental education	0.050 **	0.017	0.100 ***	0.023
Parental age	0.006	0.009	-0.011	0.017
Parental marital status	0.005	0.006	0.031 *	0.015
Number of children	-0.008	0.005	-0.012	0.008
Age of youngest child	0.003	0.008	0.003	0.018
Age of oldest child	-0.011 †	0.006	-0.009	0.014
Region	0.008 †	0.005	0.005	0.005
Urban/rural status	0.000	0.005	0.005	0.003

* significantly different from reference category ($p < 0.05$)

** significantly different from reference category ($p < 0.01$)

*** significantly different from reference category ($p < 0.001$)

† significantly different from reference category ($p < 0.10$)

Notes: RESP: registered education savings plan. All variables are measured at the economic family level. All dollar figures are expressed in 2012 constant dollars. Net worth and after-tax income are measured in equivalent dollars, obtained by dividing by the square root of the number of individuals in the economic family.

Sources: Statistics Canada, 1999 and 2012 Survey of Financial Security.

Appendix Table 4
Marginal effect of being in the top income quintile compared with the bottom income quintile on RESP holdings—stepwise tobit regression results (including RESP in net worth)

	1999		2012	
	marginal effect	bootstrap standard error	marginal effect	bootstrap standard error
No covariates	16,010 ***	2,866	34,486 ***	4,885
Add net worth	5,217 *	2,475	11,800 ***	3,308
Add parental education	1,210	2,545	6,652 *	3,324
Add parental age	1,490	2,575	6,571 †	3,360
Add parental marital status	1,151	2,546	5,471	3,440
Add number of children	1,591	2,607	7,284 *	3,466
Add age of youngest child	2,146	2,510	6,947 *	3,486
Add age of oldest child	2,567	2,458	7,118 *	3,546
Add region	1,664	2,465	6,738 †	3,693
Add urban/rural status	1,478	2,459	6,648 †	3,682
No covariates	16,010 ***	2,866	34,486 ***	4,885
Add parental education	9,469 ***	2,429	24,943 ***	3,947
Add net worth	1,210	2,545	6,652 *	3,324

* significantly different from reference category ($p < 0.05$)

*** significantly different from reference category ($p < 0.001$)

† significantly different from reference category ($p < 0.10$)

Notes: RESP: registered education savings plan. All variables are measured at the economic family level. All dollar figures are expressed in 2012 constant dollars. Net worth and after-tax income are measured in equivalent dollars, obtained by dividing by the square root of the number of individuals in the economic family.

Sources: Statistics Canada, 1999 and 2012 Survey of Financial Security.

Appendix Table 5
Sample characteristics at age 15

	Bottom income quintile		Second income quintile		Third income quintile		Fourth income quintile		Top income quintile		Boys		Girls	
	No RESP	RESP	No RESP	RESP	No RESP	RESP	No RESP	RESP	No RESP	RESP	No RESP	RESP	No RESP	RESP
							mean							
Equivalent total family income	12,404	12,409	23,289	23,418	31,287	31,701	39,608	39,907	65,595	69,270	33,290	42,581	32,339	41,135
							proportion							
Reading score														
Below the 5th percentile	0.083	0.073	0.061	0.043	0.042	0.024	0.046	0.035	0.033	0.014	0.078	0.044	0.033	0.019
From the 5th up to but excluding the 10th percentile	0.076	0.035	0.064	0.030	0.052	0.025	0.043	0.028	0.039	0.017	0.068	0.031	0.044	0.020
From the 10th up to but excluding the 25th percentile	0.203	0.128	0.180	0.121	0.156	0.092	0.141	0.089	0.130	0.081	0.181	0.105	0.149	0.086
From the 25th up to but excluding the 50th percentile	0.268	0.259	0.253	0.279	0.266	0.225	0.256	0.215	0.232	0.190	0.261	0.262	0.251	0.186
From the 50th up to but excluding the 75th percentile	0.212	0.294	0.242	0.232	0.246	0.299	0.261	0.313	0.263	0.241	0.231	0.261	0.255	0.289
From the 75th up to but excluding the 90th percentile	0.111	0.123	0.121	0.169	0.142	0.191	0.157	0.192	0.181	0.239	0.117	0.175	0.162	0.215
From the 90th up to but excluding the 95th percentile	0.028	0.048	0.041	0.062	0.053	0.058	0.047	0.054	0.054	0.086	0.034	0.056	0.053	0.073
95th percentile and above	0.020	0.040	0.039	0.065	0.043	0.086	0.049	0.074	0.068	0.131	0.030	0.065	0.054	0.111
Overall high school mark														
Below 60%	0.099	0.050	0.091	0.047	0.079	0.047	0.081	0.048	0.068	0.033	0.106	0.060	0.064	0.028
Between 60% and 69%	0.217	0.175	0.206	0.144	0.203	0.122	0.173	0.108	0.174	0.110	0.230	0.139	0.165	0.109
Between 70% and 79%	0.370	0.334	0.348	0.323	0.330	0.320	0.344	0.303	0.306	0.283	0.357	0.340	0.327	0.275
Between 80% and 89%	0.259	0.317	0.289	0.376	0.314	0.412	0.319	0.412	0.368	0.415	0.250	0.365	0.359	0.430
Between 90% and 100%	0.055	0.124	0.066	0.110	0.074	0.099	0.084	0.129	0.085	0.158	0.058	0.096	0.085	0.159
Mastery/self-esteem score														
Below the 5th percentile	0.059	0.059	0.058	0.046	0.044	0.040	0.059	0.032	0.045	0.029	0.043	0.030	0.063	0.045
From the 5th up to but excluding the 10th percentile	0.063	0.085	0.065	0.053	0.036	0.048	0.047	0.046	0.032	0.044	0.048	0.052	0.051	0.050
From the 10th up to but excluding the 25th percentile	0.157	0.172	0.161	0.140	0.148	0.108	0.137	0.134	0.167	0.138	0.142	0.122	0.166	0.147
From the 25th up to but excluding the 50th percentile	0.235	0.231	0.231	0.228	0.238	0.244	0.236	0.229	0.225	0.244	0.229	0.203	0.237	0.269
From the 50th up to but excluding the 75th percentile	0.257	0.271	0.242	0.258	0.291	0.284	0.271	0.281	0.272	0.254	0.273	0.279	0.259	0.261
From the 75th up to but excluding the 90th percentile	0.138	0.079	0.153	0.173	0.147	0.173	0.149	0.161	0.151	0.169	0.146	0.185	0.149	0.136
From the 90th up to but excluding the 95th percentile	0.045	0.042	0.047	0.044	0.048	0.049	0.050	0.054	0.053	0.073	0.055	0.060	0.042	0.052
95th percentile and above	0.047	0.061	0.044	0.058	0.047	0.054	0.051	0.062	0.056	0.049	0.064	0.071	0.034	0.041
Lone parent	0.330	0.271	0.148	0.153	0.090	0.101	0.047	0.052	0.029	0.028	0.128	0.084	0.148	0.098
Two parents, one or both not from birth	0.087	0.068	0.099	0.074	0.106	0.112	0.112	0.072	0.113	0.092	0.096	0.077	0.108	0.094
Two birth parents	0.584	0.660	0.753	0.774	0.804	0.786	0.842	0.876	0.858	0.880	0.776	0.839	0.743	0.808
Parental education														
No postsecondary qualifications	0.560	0.371	0.448	0.297	0.369	0.251	0.300	0.160	0.214	0.125	0.380	0.197	0.399	0.220
Non-university postsecondary certificate	0.309	0.370	0.394	0.440	0.426	0.383	0.376	0.326	0.332	0.251	0.373	0.356	0.361	0.318
Undergraduate degree	0.092	0.202	0.116	0.189	0.154	0.230	0.225	0.298	0.265	0.325	0.168	0.269	0.160	0.265
Graduate or professional degree	0.039	0.057	0.042	0.073	0.051	0.136	0.099	0.215	0.189	0.299	0.079	0.178	0.080	0.197

Note: RESP: registered education savings plan.

Sources: Statistics Canada, Youth in Transition Survey, Cohort A, cycle 1, and T1 Family File, 2001 to 2011; Organisation for Economic Co-operation and Development, Programme for International Student Assessment.

Appendix Table 5
Sample characteristics at age 15 (continued)

	Bottom income quintile		Second income quintile		Third income quintile		Fourth income quintile		Top income quintile		Boys		Girls	
	No RESP	RESP	No RESP	RESP	No RESP	RESP	No RESP	RESP	No RESP	RESP	No RESP	RESP	No RESP	RESP
	proportion													
Parents do not expect child to pursue postsecondary education	0.061	0.028	0.031	0.003	0.025	0.005	0.015	0.007	0.006	0.002	0.033	0.008	0.026	0.005
Parents expect child to complete postsecondary education	0.939	0.972	0.969	0.997	0.975	0.995	0.985	0.993	0.994	0.998	0.967	0.992	0.974	0.995
Parents expect child to complete university degree	0.560	0.725	0.574	0.706	0.624	0.779	0.666	0.827	0.752	0.867	0.583	0.772	0.672	0.831
Perception of returns to schooling														
Very low	0.023	0.005	0.025	0.014	0.021	0.014	0.021	0.011	0.023	0.018	0.035	0.020	0.011	0.008
Low	0.082	0.057	0.072	0.062	0.067	0.064	0.057	0.062	0.071	0.035	0.082	0.056	0.060	0.053
High	0.477	0.473	0.494	0.440	0.504	0.466	0.518	0.463	0.496	0.466	0.492	0.462	0.501	0.462
Very high	0.417	0.464	0.409	0.485	0.408	0.457	0.404	0.464	0.410	0.480	0.391	0.462	0.428	0.478
Few or no friends plan to further education after high school	0.262	0.216	0.239	0.143	0.197	0.141	0.170	0.139	0.158	0.098	0.253	0.164	0.168	0.108
Most friends plan to further education after high school	0.458	0.469	0.482	0.514	0.499	0.514	0.504	0.490	0.505	0.485	0.495	0.525	0.482	0.467
All friends plan to further education after high school	0.280	0.316	0.279	0.343	0.304	0.346	0.325	0.371	0.337	0.417	0.252	0.312	0.350	0.425
Atlantic provinces	0.129	0.104	0.110	0.102	0.083	0.082	0.061	0.070	0.048	0.060	0.085	0.078	0.093	0.077
Quebec	0.290	0.169	0.288	0.151	0.259	0.143	0.213	0.118	0.215	0.155	0.266	0.138	0.246	0.149
Ontario	0.292	0.363	0.304	0.372	0.350	0.473	0.408	0.512	0.438	0.469	0.335	0.462	0.370	0.451
Manitoba or Saskatchewan	0.092	0.091	0.089	0.089	0.078	0.076	0.067	0.059	0.050	0.059	0.077	0.071	0.076	0.069
Alberta	0.074	0.099	0.102	0.108	0.101	0.087	0.110	0.113	0.140	0.129	0.110	0.114	0.098	0.107
British Columbia	0.122	0.173	0.108	0.177	0.129	0.138	0.142	0.128	0.109	0.128	0.126	0.136	0.118	0.147
Male	0.449	0.434	0.492	0.529	0.487	0.505	0.500	0.490	0.503	0.468	1.000	1.000	0.000	0.000
Female	0.551	0.566	0.508	0.471	0.513	0.495	0.500	0.510	0.497	0.532	0.000	0.000	1.000	1.000
School quality index score														
Below the 5th percentile	0.166	0.149	0.146	0.142	0.164	0.146	0.141	0.116	0.130	0.142	0.167	0.144	0.135	0.130
From the 5th up to but excluding the 10th percentile	0.055	0.023	0.045	0.037	0.039	0.054	0.050	0.057	0.046	0.020	0.049	0.044	0.045	0.035
From the 10th up to but excluding the 25th percentile	0.149	0.123	0.150	0.185	0.132	0.134	0.109	0.141	0.121	0.133	0.126	0.131	0.141	0.152
From the 25th up to but excluding the 50th percentile	0.209	0.238	0.217	0.224	0.240	0.184	0.234	0.236	0.223	0.211	0.210	0.216	0.237	0.217
From the 50th up to but excluding the 75th percentile	0.202	0.235	0.188	0.208	0.213	0.255	0.243	0.248	0.239	0.298	0.210	0.248	0.220	0.265
From the 75th up to but excluding the 90th percentile	0.121	0.138	0.145	0.130	0.122	0.134	0.139	0.130	0.156	0.128	0.137	0.138	0.135	0.124
From the 90th up to but excluding the 95th percentile	0.040	0.040	0.053	0.027	0.046	0.046	0.045	0.037	0.048	0.042	0.050	0.034	0.043	0.044
95th percentile and above	0.058	0.054	0.056	0.048	0.043	0.047	0.039	0.035	0.038	0.027	0.051	0.045	0.044	0.033
	number													
Sample size	4,431	452	3,897	689	3,111	798	2,556	960	2,165	1,025	7,818	1,910	8,342	2,014

Note: RESP: registered education savings plan.

Sources: Statistics Canada, Youth in Transition Survey, Cohort A, cycle 1, and T1 Family File, 2001 to 2011; Organisation for Economic Co-operation and Development, Programme for International Student Assessment.

Appendix Table 6-1
Estimated marginal effect of the presence of an RESP account at age 15 on the probability of postsecondary enrolment by ages 19 to 23

	By age 19		By age 20		By age 21		By age 22		By age 23	
	coefficient	bootstrap standard error	coefficient	bootstrap standard error	coefficient	bootstrap standard error	coefficient	bootstrap standard error	coefficient	bootstrap standard error
All	0.059 ***	0.011	0.053 ***	0.009	0.042 ***	0.008	0.038 ***	0.007	0.035 ***	0.007
Income quintile										
Bottom	0.062 *	0.031	0.041	0.028	0.016	0.026	0.032	0.024	0.036 †	0.022
Second	0.047 †	0.028	0.064 **	0.022	0.056 **	0.019	0.054 **	0.019	0.045 *	0.020
Third	0.075 **	0.025	0.074 ***	0.022	0.062 ***	0.019	0.069 ***	0.016	0.057 ***	0.016
Fourth	0.059 **	0.021	0.059 **	0.018	0.047 **	0.016	0.034 *	0.016	0.029 †	0.015
Top	0.047 *	0.020	0.030 †	0.015	0.026 †	0.015	0.014	0.015	0.018	0.014
Boys	0.078 ***	0.016	0.064 ***	0.015	0.053 ***	0.012	0.048 ***	0.012	0.043 ***	0.011
Girls	0.043 **	0.015	0.042 ***	0.010	0.032 ***	0.009	0.029 ***	0.008	0.027 ***	0.008

* significantly different from reference category ($p < 0.05$)

** significantly different from reference category ($p < 0.01$)

*** significantly different from reference category ($p < 0.001$)

† significantly different from reference category ($p < 0.10$)

Notes: RESP: registered education savings plan. Marginal probability effects are derived from linear probability models that include as covariates the socioeconomic characteristics appearing in Appendix Table 5.

Sources: Statistics Canada, Youth in Transition Survey, Cohort A, cycle 1, and T1 Family File, 2001 to 2011; Organisation for Economic Co-operation and Development, Programme for International Student Assessment.

Appendix Table 6-2
Estimated marginal effect of the presence of an RESP account at age 15 on the probability of postsecondary enrolment by ages 24 to 27

	By age 24		By age 25		By age 26		By age 27	
	coefficient	bootstrap standard error	coefficient	bootstrap standard error	coefficient	bootstrap standard error	coefficient	bootstrap standard error
All	0.029 ***	0.006	0.025 ***	0.006	0.027 ***	0.006	0.027 ***	0.006
Income quintile								
Bottom	0.040 †	0.022	0.030	0.020	0.022	0.020	0.027	0.022
Second	0.044 *	0.018	0.037 *	0.018	0.041 *	0.018	0.039 *	0.018
Third	0.044 **	0.015	0.034 *	0.015	0.039 **	0.015	0.041 **	0.015
Fourth	0.024 †	0.015	0.023 †	0.014	0.030 *	0.012	0.027 *	0.012
Top	0.012	0.014	0.011	0.012	0.008	0.012	0.007	0.012
Boys	0.037 ***	0.010	0.032 ***	0.009	0.036 ***	0.009	0.037 ***	0.009
Girls	0.021 **	0.007	0.017 *	0.007	0.018 *	0.008	0.016 *	0.007

* significantly different from reference category ($p < 0.05$)

** significantly different from reference category ($p < 0.01$)

*** significantly different from reference category ($p < 0.001$)

† significantly different from reference category ($p < 0.10$)

Notes: RESP: registered education savings plan. Marginal probability effects are derived from linear probability models that include as covariates the socioeconomic characteristics appearing in Appendix Table 5.

Sources: Statistics Canada, Youth in Transition Survey, Cohort A, cycle 1, and T1 Family File, 2001 to 2011; Organisation for Economic Co-operation and Development, Programme for International Student Assessment.

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